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PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional) 07009/011002	
		Application Number 10/044,604-Conf. #1887	Filed January 11, 2002
		First Named Inventor James Fraivilling	
		Art Unit 3729	Examiner M. N. Trinh
<p>Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.</p> <p>This request is being filed with a notice of appeal.</p> <p>The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.</p>			
<p>I am the</p> <p><input type="checkbox"/> applicant /inventor.</p> <p><input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/98)</p> <p><input checked="" type="checkbox"/> attorney or agent of record. Registration number <u>48,885</u></p> <p><input type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34. _____</p>		<p> Signature</p> <p>T. Chyau Liang, Ph.D. Typed or printed name</p> <p>22511 PATENT TRADEMARK OFFICE</p> <p>(713) 228-8800 Telephone number</p> <p>June 8, 2006 Date</p>	
<p>NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.</p>			
<p><input checked="" type="checkbox"/> Total of <u>1</u> forms are submitted.</p>			

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Docket No.: 07009/011002
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
James Fraivillig

22511
PATENT TRADEMARK OFFICE

Application No.: 10/044,604

Confirmation No.: 1887

Filed: January 11, 2002

Art Unit: 3729

For: MOUNTING A FLEXIBLE PRINTED
CIRCUIT TO A HEAT SINK

Examiner: M. N. Trinh

MS AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF CONFERENCE REQUEST

Claims 1-15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fraivillig (6,015,607) in view of Hoffmeyer (5,757,073).

Applicant respectfully submits that the Examiner fails to satisfy the requirements set for in MPEP §2143 in maintaining the above rejection. Specifically, in order to establish a prima facie obviousness rejection, MPEP § 2143 requires that "the prior art reference (or references when combined) must teach or suggest all the claim limitations."

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Turning to the claims, the only independent claim 1 recites:

1. A method for manufacturing a flexible printed circuit bonded to a heat sink using a process that includes two bonding steps, the method comprising:
 - in a first bonding step, adhering a conductive layer to a first surface of a bond film using a first adhesive layer to produce a circuit substrate, wherein the adhering is achieved by partially activating the first adhesive layer such that the conductive layer is tack-bonded to the bond film;
 - after the first bonding step, processing the circuit substrate to produce the flexible printed circuit; and
 - after the circuit substrate is processed, laminating the heat sink to a second surface of the bond film of the flexible printed circuit, in a second bonding step, using a second adhesive layer.

Specifically, the independent claim requires: “the adhering is achieved by partially activating the first adhesive layer such that the conductive layer is tack-bonded to the bond film.”

As explained in the specification (e.g., paragraphs [0023] and [0024] of the published application No. 2002/0092163), “tack-bond” involves “B-staged” adhesive. “B-stage” and “tack-bond” are terms used in the adhesive art, referring to an intermediate state of an adhesive that can exist for a relatively long duration such that other processes may be carried out while the adhesive remains in the B-staged state. The “B-staged” or “tack-bond” state is not a fleeting moment between the uncured and fully cured states. Not all adhesives are capable of existing in the B-staged state. Examples of adhesives that can have B-staged state

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include polyimides and acrylics. (see paragraph [0026] of the published application No. 2002/0092163). It is worth noting that most of the commonly used adhesives, such as polyetherimide, siloxane polyetherimide, and silicone, cannot be partially activated to the B stage.

The Fraivillig '607 patent (which was issued to the Applicant of the instant application) discloses *single-step methods* for making flexible laminates using a polyetherimide or a siloxane polyetherimide copolymer. (Abstract). The Examiner acknowledged that Fraivillig '607 does not teach a two-step process, but relied on Hoffmeyer to provide the teaching of a two-step process. Hoffmeyer discloses a method of attaching electronic components to a substrate that has been previously attached to a heat sink. The intermediary substrate layer facilitates the replacement of the electronic components when it becomes necessary to replace the electronic components. Acknowledging that Hoffmeyer fails to teach tack bond or B-staged adhesives, the Examiner asserts that the polyetherimide or siloxane polyetherimide copolymer can be B-staged. Applicant respectfully disagrees.

Specifically, the Examiner asserts: "Regarding the partially cure or partially activating the first adhesive layer such that the conductive layer is tack bonded to the bond film. It is inherent that for the adhesive to be curing it has to be in process of partially activating or curing until it is matured and fully cured." (Final Office Action, p. 4, lines 18-21). In essence, the Examiner asserts that any adhesive can provide a "partially cured" state on its way to the fully cured state. While that assertion is technically true, it confuses the *fleeting* "partially cured" state with the *defined* "B-staged" or "tack-bond" state, as known to one skill in the art.

One of ordinary skill in the art would appreciate that not all adhesives are capable of a B-staged state. Specifically, the polyetherimide or siloxane polyetherimide disclosed in the Fraivillig '607 patent cannot provide the B-staged state because upon activation, these adhesives

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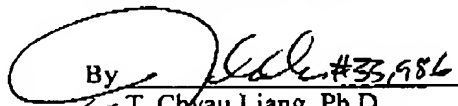
are already fully-cured before being dissolved in solvent and coated onto a dielectric film. In no case are they partially-cured, or B-stage. Furthermore, in no case in Hoffmeyer is the silicone pressure-sensitive adhesive partially-cured, or B-staged. Thus, Fraivillig '607 patent fails to teach or suggest adhesives that can form B-staged states such that the circuits may be processed, as required by claim 1, while the adhesive remains in the B stage.

For reasons set forth above, Applicant respectfully submits that the Examiner fails to establish a *prima facie* case that a combination of Fraivillig '607 patent and Hoffmeyer teaches or suggests all limitations of the independent claim 1. Specifically, neither Fraivillig nor Hoffmeyer teaches or suggests an adhesive that can form tack bonds such that the circuit may be processed without causing the adhesive to become fully cured. Thus, Fraivillig '607 patent and Hoffmeyer, whether considered separately or in combination, fail to teach each and every limitation of claim 1. Therefore, claim 1 is patentable over Fraivillig '607 patent and Hoffmeyer, and dependent claims 2-15 are also patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Applicant believes no additional fee is due. However, in the event that additional fees are due, the director is authorized to apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 07009/011002).

Dated: June 9, 2006

Respectfully submitted,

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